



WATER RESOURCES RESEARCH GRANT PROPOSAL

Title: Tanapag and Achugao Springs Improvement Study, Saipan

Focus Categories: Water Resources Development, Runoff, Springs, Surface Drainage, Surface-Groundwater Relationships, Water Treatment, Information Dissemination.

Keyword Numbers: 144, 181, 225, 254, 273

Duration: March 1, 1999 to February 29, 2000

Fiscal Year 1999 Federal Funds: \$12,480

Non-Federal Funds Allocated: N/A

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Congressional District of University Performing the Research: N/A

Statement of the Critical Regional or State Problem

Saipan's Public water system is currently not able to satisfy the ever increasing demands placed on it by commercial development and rapid population growth. Water rationing now occurs in many parts of the island. This limits the economic development potential for the island and poses potential health risks to its population. As the quantity of water pumped from the island's aquifers has increased, the quality of the water delivered to the consumer has decreased. The poor quality is mainly associated with salt water intrusion. The water contains concentrations of chloride and other minerals in excess of United States and World Health Organization drinking water standards.

The existing Tanapag and Achugao springs are high quality (low chloride concentration) water sources for the island, but they have been determined by the Division of Environmental Quality to be "Groundwater Under the Influence of Surface Water". While the flow from the springs varies with the season, they currently do not capture all the flow available. Water from the springs is currently piped directly into the public distribution system without treatment. Treatment is required to meet SDWA requirements.

Statement of the Results and Benefits of the Information Expected

The principal benefit of this study is that it will provide the Commonwealth Utility Corporation quantitative data and determine the feasibility of improving their spring water sources. Specifically the report will describe how to comply with SDWA regulatory requirements and to maximize water capture. This study will discuss the need, planning, treatment, and costs to improve the capture of water from the spring sources. Improving capture is a cost effective method to increase public water quality and quantity. A step by step project outline and implementation schedule will be prepared leading to water sources that comply with regulatory requirements.

Nature, Scope, and Objectives of the Research

The major objective of this study is to determine the best method to increase spring capture and to meet SDWA treatment requirements. This will include flow studies, planning, initial facilities sizing, site plan, and cost estimates. Specific objectives are as outlined below:

1. To test and evaluate water quality characteristics and flow rates from the springs.
2. To increase capture rates and quantities of high-quality water for potable use.
3. To present a plan for surface water treatment meeting SDWA requirements